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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,284	07/08/2003	Michael X. Yang	AMAT/7669.P1/CMP/ECP/RKK	9910

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EXAMINER	
ZHENG, LOIS L	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/616,284	YANG ET AL.	
	Examiner	Art Unit	
	Lois Zheng	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 3 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 3 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 1-2, 4-25 and 29-32 are canceled in view of the amendment filed 7 July 2006. Claim 3 is amended in view of the amendment. Therefore, claim 3 remains under examination.

Allowable Subject Matter

2. The indicated allowability of claim 3 is withdrawn in view of the newly discovered reference(s) to Pascal et al. US 6,415,804 B1(Pascal). Rejections based on the newly cited reference(s) follow.

Therefore, the finality of the previous Office Action mailed 7 March 2006 is withdrawn and the prosecution is reopened.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dordi et al US 6,267,853 B1(Dordi) in view of Pascal et al. US 6,415,804 B1(Pascal), and further in view of Sendai et al US 6,558,518 B1(Sendai).

Dordi teaches an electrochemical deposition system comprising a plurality of plating cells(Fig. 3 numeral 240) disposed on a common platform(Fig. 3 numeral 214), a cleaning cell(Fig. 3 numeral 212) positioned on the platform, a spin rinse dry cell(Fig. 3

numeral 212) between the substrate plating cells and the substrate loading station, an annealing chamber(Fig. 3 numeral 211) in communication with the platform and an electrolyte replenishing system(Fig. 3 numeral 220) in communication with the platform.

However, Dordi's spin rinse dry cell does not have the same structure as claimed. Dordi also does not teach the stacked substrate annealing system as claimed.

Pascal teaches a spin rinse dry cell used in semiconductor fabrication(col. 1 lines 5-8). The spin rinse dry cell of Pascal comprises a cell bowl having an upstanding cylindrical wall(Fig. 4 numeral 102b), an annular and inwardly curving pressure reducing surface positioned on a top portion of the upstanding cylindrical wall(Fig. 4 numeral 124b), a fluid receiving shield extending radially inward from an upper portion of the upstanding cylindrical wall(Fig. 4 numeral 126 or numeral 124a), a rotatable substrate support member centrally positioned in the cell bowl(Fig. 1 numeral 112, 110 and 114a-c) and a fluid dispensing nozzle configured to dispense a rinsing solution onto an upper surface of a substrate positioned on the support member(col. 8 lines 14-18).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the spin rinse dry cell of Parcel into the electrochemical plating apparatus of Dordi in order to control the airflow around a wafer and minimize recontamination caused by recirculating particles and DI water droplets as taught by Pascal(col. 8 lines 30-39).

Sendai discloses an electroplating apparatus comprising vertically stacked heating furnaces(Fig. 26, col. 25 lines 40-61, claim 15).

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated a stacked substrate system as taught by Sendai into the annealing system in the electrochemical plating system of Dordi in view of Pascal in order to allowing annealing of multiple substrates at a time as taught by Sendai(claim 15).

Regarding claim 1, Dordi in view of Pascal and Sendai teach an electrochemical deposition system comprising a loading station(Dordi, Fig. 3 numeral 210) disposed on a mainframe(Dordi, Fig. 3 numeral 214), a plurality of plating cells(Dordi, Fig. 3 numeral 240) disposed on the mainframe, a bevel clean cell(Dordi, Fig. 14) positioned on the mainframe, a spin rinse dry cell positioned on the mainframe(Pascal), a stacked substrate annealing chamber(Dordi, Fig. 3 numeral 211, Sendai, Fig. 26) in communication with the mainframe having a substrate heating plate(Dordi, Fig. 8 numeral 904) and a substrate cooling plate(Dordi, Fig. 8 numeral 913) adjacently positioned as claimed.

In addition, since the instant claim only requires an inwardly curving pressure reducing surface, the examiner concludes that the bottom surface of the projection(Fig. 4 numeral 124b) in the spin rinse dry cell of Pascal reads on the claimed inwardly curving pressure reducing surface).

Furthermore, since neither the instant specification nor the instant claim supports or requires that the claimed fluid receiving shield being attached to the upper portion of the cylindrical wall, the examiner concludes that the annular flow guide(Fig. 4 numeral 126) as taught by Pascal reads on the claimed fluid receiving shield being extending radially inward from the upper portion of the cylindrical wall of the spin rinse dry cell.

Even if the annular flow guide of Pascal were not to be read on the claimed fluid receiving shield, the projection of Pascal(Fig. 4 numeral 124) still reads on the claimed fluid receiving shield extending radially inward from the upper portion of the cylindrical wall.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

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